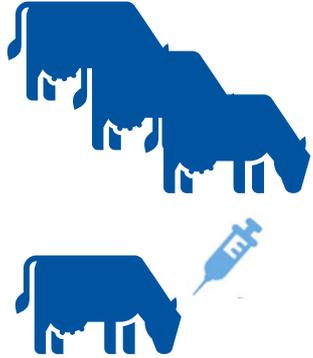# Tuberculosis in cattle

- Tuberculosis is a notifiable disease
- Veterinary BSL-3 level required
- Natural host model for *Mycobacterium bovis*
- Pathogenesis studies
- Clinical trials

Study design: Tuberculosis in cattle

- Cows, 6 months of age
- Several groups, maximum of 70 cows
- Challenge routes:
  - intravenous, aerosol, pulmonary
- Several challenge strains available
  - *Mycobacterium bovis* type strains and field isolates
  - Non tuberculous mycobacteria interfering with TB diagnostics
- Clinical observations
  - Temperature
  - General condition
  - Local vaccination reaction

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Parameters: Tuberculosis in cattle

- Bacteriology
  - Bacterial culture
  - Molecular diagnostics e.g. PCR, genotyping, whole genome sequencing

- Immunology
  - (Recombinant) antigens available for evaluation
  - Serology
  - T cell immunology (cytokines)
  - Transcriptomics

- Pathology
  - Macroscopically
  - Microscopically: immune histopathology